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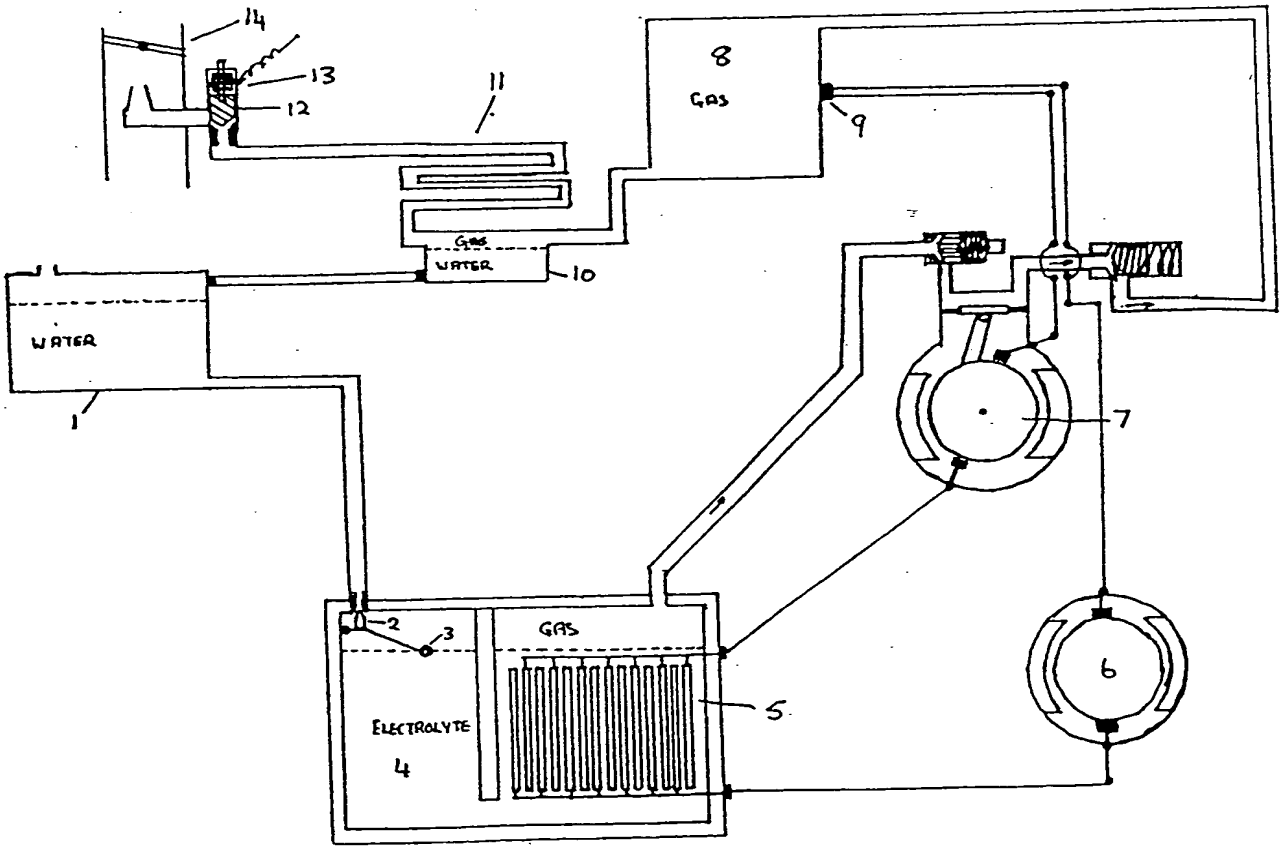
(54) Gas generation and control system for an engine

(57) The gas generation and control system has a gas generator 5 which by electrolysis creates hydrogen gas which is compressed by compressor 7 into tank 8 to allow for heavy demands of gas, e.g. acceleration and starting. It is fed from there through a water extraction cooler 11 to an engine control system 12, 14 which controls gas flow to the engine and thus engine speed and developed power.



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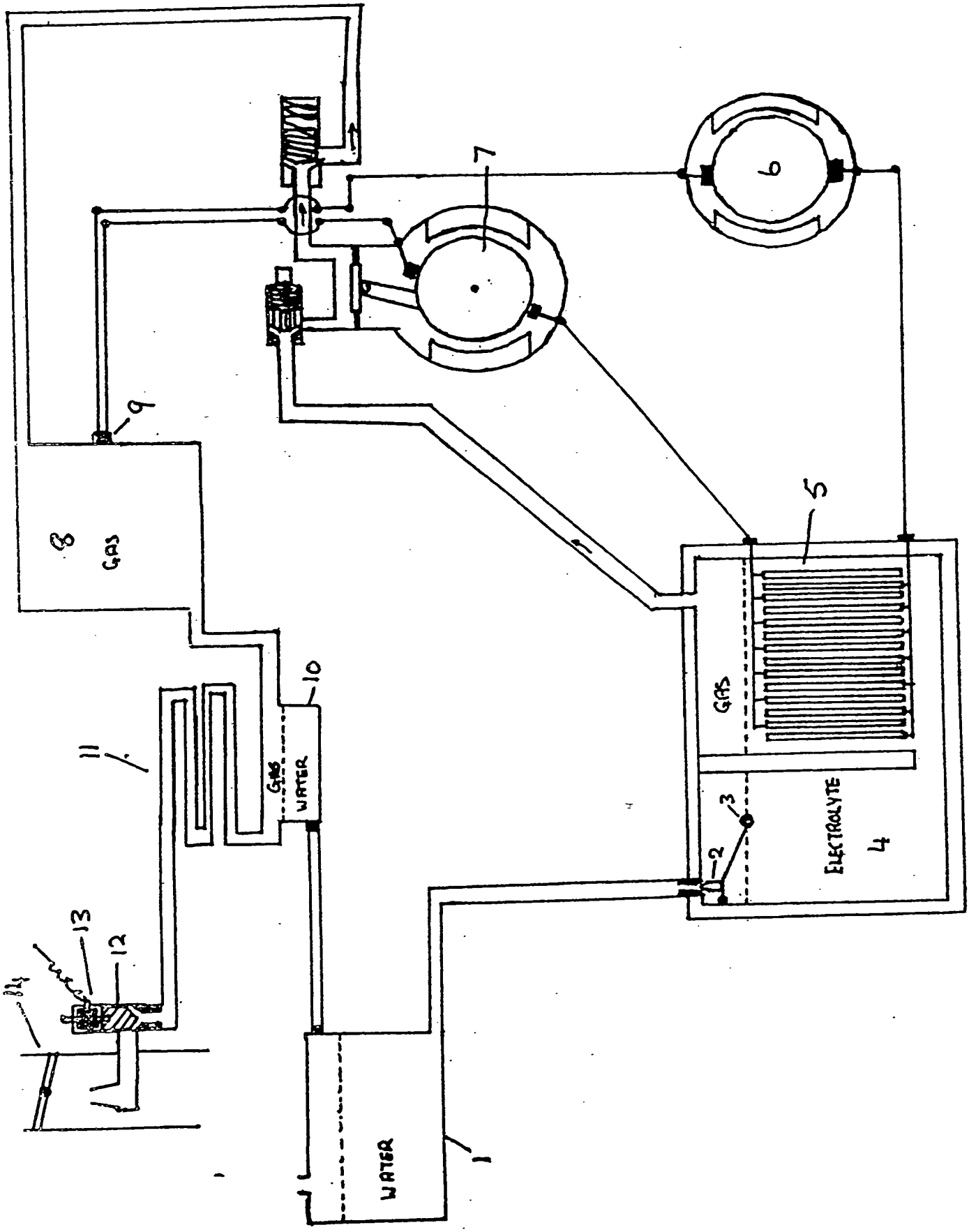
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7
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GAS
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GAS
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GAS
WATER
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13
12
H_2
WATER
1

SPECIFICATION

Gas Generation and Control System

The invention relates to the extraction of combustible gases from water, to be used in reciprocating and turbine internal combustion engines.

According to the present invention, there is provided a fuel generation and distribution system comprising a gas generator, water tank and feed and level system, electrical generator, diaphragm compressor and pressure storage tank with safety switches, cooler and water trap gas flow regulator and engine speed control with electrically operated gas "on-off" control.

A specific embodiment of the invention will now be described by way of example with reference to the accompanying drawing.

The gas generator 5 comprises of three cells containing several electrodes each and inter-connected cell to cell. They contain dilute sulphuric acid and a water replenishment tank 4. On application of a current from generator 6 across the terminals of the generator, electrolysis of the water content of the solution takes place thus releasing hydrogen and oxygen gases. With the electrolysis of the electrolyte, the level in the generator drops, and this is replenished from a water storage tank 1 by way of control valve 2 and plastic float 3.

The gas from the generator 5 is fed to a electrically driven diaphragm type compressor 7 which compresses the gas into a tank 8 to retain a certain amount of gas for starting and acceleration purposes. There is also a pressure sensitive switch system 9 to switch off the current to the gas generator in the event of gas pressure being excessive.

A gas cooler 11 is incorporated in the circuit because as well as hydrogen and oxygen, water vapour is generated, and also the gases are quite hot. On passing over the cooler the water vapour condenses out of the gas and is collected in the water trap and drain 10.

Gas flow to the engine is controlled by a gas flow volume restricting valve 12, which also contains a "shut-off" valve 13, for use in case of emergency and also when the engine is not running. It is inter-connected with the air volume butterfly valve 14. From these valves the gas is fed through an inlet manifold into the engine, and mixing takes place in the manifold.

CLAIMS

1. A gas generation and control system comprising a gas generator, electrical generator diaphragm compressor and pressure storage tank, gas cooler and water trap and gas and air volume controls.

2. A gas generation and control system, as claimed in claim 1, wherein a gas generator electrolysises dilute sulphuric acid to provide hydrogen gas.

3. A gas generation and control system, as claimed in any preceding claim, wherein hydrogen gas is compressed by an electrically operated diaphgram compressor and stored under pressure in a steel pressure tank with safety pressure "on-off" switch.

4. A gas generation and control system, as claimed in any preceding claim, wherein a gas cooler and water trap is provided to extract water vapour from the gas.

5. A gas generation and control system, as claimed in any preceding claim, wherein a gas flow volume restricting valve and air volume butterfly valve are provided to control the fuel flow to the engine.

6. A gas generation and control system substantially described herein with reference to the accompanying drawing.

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